

REMARKS

Favorable reconsideration of this application, in light of the following discussion and in view of the present amendment, is respectfully requested.

Claims 5 and 20 are cancelled. Claims 1 and 18 are amended. Claims 1-4, 6-19 and 21-29 are pending.

I. Rejections under 35 U.S.C. § 102

Ryu

In the Office Action, at page 2, numbered paragraph 3, claims 1-4 and 18-19 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Application No. 2003/0061842 to Ryu et al. This rejection is respectfully traversed because Ryu et al. does not discuss or suggest:

a rotary drum located in the water tub to partially surround the wash water contained in the water tub, the rotary drum being installed to be inclined by a determined angle and including a back wall coupled to a rotary shaft, a front wall having a central opening, a cylindrical side wall having opposite ends respectively coupled to the front and back walls, and a plurality of perforations formed through the front wall to allow the wash water to be drained when the rotary drum rotates;

a water supplier to supply the wash water into the water tub and to supply the wash water into the rotary drum directly; and

a controller to control the water supplier to supply the wash water into the water tub and the rotary drum, respectively, while washing laundry, which has been placed in the rotary drum,

as recited in amended independent claim 1.

In addition, Ryu does not discuss or suggest:

a water supplier to supply the wash water into the water tub and the rotary drum;

a circulator to circulate the wash water; and

a controller to control the water supplier to supply the wash water into the water tub and the rotary drum, respectively, while washing laundry, which has been placed in the rotary drum, and to control the circulator to mix the wash water contained in the water tub with the wash water contained in the rotary drum,

wherein the rotary drum is installed to be inclined by a determined angle and includes a back wall coupled to a rotary shaft, a front wall having a central opening, a cylindrical side wall having

opposite ends respectively coupled to the front and back walls,
and a plurality of perforations formed through the front wall to allow
the wash water to be drained when the rotary drum rotates,

as recited in amended independent claim 18.

As a non-limiting example, the present invention according to claim 1, for example, is directed to a drum washing machine including a water tub, a rotary drum, a water supplier and a controller. The water tub contains wash water, and the rotary drum is located in the water tub to partially surround the wash water contained in the water tub. The rotary drum is installed to be inclined by a determined angle and includes a back wall coupled to a rotary shaft, a front wall having a central opening, a cylindrical side wall having opposite ends respectively coupled to the front and back walls, and a plurality of perforations formed through the front wall to allow the wash water to be drained when the rotary drum rotates. The water supplier supplies the wash water into the water tub and supplies the wash water into the rotary drum directly. The controller controls the water supplier to supply the wash water into the water tub and the rotary drum, respectively, while washing laundry, which has been placed in the rotary drum.

Ryu discusses a drum type washing machine including a fixed drum 20, a rotary drum 30 and a circulation device 60. Ryu discusses that the water circulation device 60 feeds the wash water in the fixed drum 20 to the rotary drum 30 in washing and rinsing operations. Water is supplied from an external water supply source, passes through a water supply hose 14 and a detergent container 13 and is fed into the fixed drum 20. The water circulation device 60 includes a guide unit 61, a storing unit 62 and a spraying unit 63 in which wash water contained in the storing unit 62 is guided to a rear panel 32 of the rotary drum 30. The spraying unit 63 sprays the wash water contained in the storing unit 62 into the rotary drum 30. The water circulation device 60 feeds the wash water pumped out by a pump unit into the rotary drum 30.

First, Ryu does not discuss or suggest that the rotary drum is installed to be inclined by a determined angle. The drum 30 of Ryu is not installed in an inclined manner and is not inclined by a specified degree, for example. In addition, Ryu does not discuss or suggest that the rotary drum 30 includes a front wall, a back wall, and a plurality of perforations formed through the front wall to allow wash water to be drained with the rotary drum 30 rotates. Ryu includes spin-dry perforations 33a, but does not suggest that the perforations are formed through a front wall of the rotary drum 30. Ryu discusses that the cylindrical side panel 33 of the rotary drum 30 connects the front panel 31 to the rear panel 32, has a cylindrical shaft and is performed to form spin-drying perforations 33a. The perforations 33a thus are not formed on the front panel 31, and therefore cannot be considered to be formed through the front wall of the drum 30.

Second, Ryu, does not discuss or suggest that a water supplier supplies wash water into the water tub and supplies the wash water into the rotary drum directly. Specifically, Ryu discusses that water supplied from an external water supply source through a water supply hose 14 and is fed into the fixed drum 20. Ryu does not discuss or suggest that a water supplier supplies wash water into the rotary drum directly. There is no direct supply from water supply hose 14 directly into the rotary drum 30. The water circulation device 60 does not supply wash water into the water tub and supply the wash water into the rotary drum directly, as the hose 14 is the only supplier of wash water into the fixed drum 20.

Further, Ryu does not suggest that a controller controls a water supplier to supply wash water into the water tub and the rotary drum, respectively, while washing laundry. Ryu includes no discussion of hose 14 supplying wash water into both the water tub and the rotary drum while washing laundry, and water circulation device 60 only guides wash water drained from the fixed drum 20 and pumped through pump 51 up through the guide unit 61 into the storing unit 62 so that the water is sprayed into the rotary drum 30. Thus, in Ryu, the water supplier does not both supply wash water into fixed drum 20 and into rotary drum 30 while washing laundry.

Therefore, as Ryu does not discuss or suggest, "a rotary drum located in the water tub to partially surround the wash water contained in the water tub, the rotary drum being installed to be inclined by a determined angle and including a back wall coupled to a rotary shaft, a front wall having a central opening, a cylindrical side wall having opposite ends respectively coupled to the front and back walls, and a plurality of perforations formed through the front wall to allow the wash water to be drained when the rotary drum rotates; a water supplier to supply the wash water into the water tub and to supply the wash water into the rotary drum directly; and a controller to control the water supplier to supply the wash water into the water tub and the rotary drum, respectively, while washing laundry, which has been placed in the rotary drum," as recited in amended independent claim 1, and as Ryu does not discuss or suggest "a water supplier to supply the wash water into the water tub and the rotary drum; a circulator to circulate the wash water; and a controller to control the water supplier to supply the wash water into the water tub and the rotary drum, respectively, while washing laundry, which has been placed in the rotary drum, and to control the circulator to mix the wash water contained in the water tub with the wash water contained in the rotary drum, wherein the rotary drum is installed to be inclined by a determined angle and includes a back wall coupled to a rotary shaft, a front wall having a central opening, a cylindrical side wall having opposite ends respectively coupled to the front and back walls, and a plurality of perforations formed through the front wall to allow the wash water to be

drained when the rotary drum rotates," as recited in amended independent claim 18, claims 1 and 18 patentably distinguish over the reference relied upon. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

Claims 2-4 and 19 depend either directly or indirectly from independent claims 1 and 18 and include all the features of their respective independent claims, plus additional features that are not discussed or suggested by the reference relied upon. For example, claim 4 recites that, "the controller controls the drum driver to wash laundry using only the wash water supplied into the rotary drum." Therefore, claims 2-4 and 19 patentably distinguish over the reference relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

Imamura

In the Office Action, at page 2, numbered paragraph 4, claims 1-4, 7-10, and 18-19 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,870,905 to Imamura et al. This rejection is respectfully traversed because Imamura does not discuss or suggest all the features of amended independent claims 1 and 18.

Imamura discusses a drum type washing machine including a washing tub 2 and a drum-shaped spin basket 3. Imamura further includes a fresh water supply inlet 22 formed in a top side of the case 1 above the washing tub 2. The fresh water supply inlet 22 is connected to a water supply valve 9 through a water pipe in order to supply water or fresh water into the washing tub 2 and the drum-shaped spin basket 3. As shown in Fig. 1 of Imamura, fresh water supply inlet 22 does not directly supply water to the drum-shaped spin basket 3. In a washing operation of the washing machine, the fresh water supply valve 9 is opened and washing water 27 containing fresh water is supplied through the fresh water supply valve to the washing tub 2. The washing water supply is continued until a predetermined amount of the fresh water is supplied into the washing tub 2 and after the fresh water supply process is completed, the washing operation is initiated. Thus, Imamura only discusses that water is supplied through the water inlet 22 to the washing tub 2, but Imamura does not discuss or suggest that the water supply inlet 22 supplies water directly to the drum-shaped spin basket 3.

Further, Imamura does not discuss or suggest that a water supplier is controlled to supply wash water into the washing tub 2 and into the drum-shaped spin basket 3 directly while washing laundry. Imamura discusses only that the fresh water supply valve 9 is opened and washing water 27 is supplied to the washing tub 2 before the washing operation is initiated, but

does not suggest that wash water is supplied both to the washing tub 2 and to the drum-shaped spin basket 3 while washing laundry.

Additionally, Imamura does not discuss or suggest that the drum-shaped spin basket 3 is inclined by a determined angle. The basket 3 is not inclined, but is nested in a non-inclined manner within the washing tub 2. Further, Imamura does not discuss or suggest that the rotary drum includes a front wall, a back wall, a cylindrical side wall, and a plurality of perforations that are formed through the front wall to allow the wash water to be drained when the rotary drum rotates. The holes 20 in Imamura are formed through the side wall of the spin basket 3, but are not formed through a front wall having a central opening of the basket 3. The basket 3 does not include a front wall with perforations for allowing water to be drained.

Therefore, as Imamura does not discuss or suggest, "a rotary drum located in the water tub to partially surround the wash water contained in the water tub, the rotary drum being installed to be inclined by a determined angle and including a back wall coupled to a rotary shaft, a front wall having a central opening, a cylindrical side wall having opposite ends respectively coupled to the front and back walls, and a plurality of perforations formed through the front wall to allow the wash water to be drained when the rotary drum rotates; a water supplier to supply the wash water into the water tub and to supply the wash water into the rotary drum directly; and a controller to control the water supplier to supply the wash water into the water tub and the rotary drum, respectively, while washing laundry, which has been placed in the rotary drum," as recited in amended independent claim 1, and as Ryu does not discuss or suggest "a water supplier to supply the wash water into the water tub and the rotary drum; a circulator to circulate the wash water; and a controller to control the water supplier to supply the wash water into the water tub and the rotary drum, respectively, while washing laundry, which has been placed in the rotary drum, and to control the circulator to mix the wash water contained in the water tub with the wash water contained in the rotary drum, wherein the rotary drum is installed to be inclined by a determined angle and includes a back wall coupled to a rotary shaft, a front wall having a central opening, a cylindrical side wall having opposite ends respectively coupled to the front and back walls, and a plurality of perforations formed through the front wall to allow the wash water to be drained when the rotary drum rotates," as recited in amended independent claim 18, claims 1 and 18 patentably distinguish over the reference relied upon. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

Claims 2-4, 7-10 and 19 depend either directly or indirectly from independent claims 1 and 18 and include all the features of their respective independent claims, plus additional

features that are not discussed or suggested by the reference relied upon. For example, claim 9 recites, "a water temperature sensor to detect temperature of the wash water contained in the water tub, wherein the controller controls the heater to heat the contained wash water in stages until the water temperature detected by the water temperature sensor reaches a set temperature." Imamura does not discuss or suggest that the contained wash water is in stages until a water temperature detected by the water temperature sensor reaches a set temperature. Therefore, claims 2-4, 7-10 and 19 patentably distinguish over the reference relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

II. Rejections under 35 U.S.C. § 103

In the Office Action, at page 3, numbered paragraph 6, claims 1-5 and 18-20 were rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,516,484 to Kwon. Claims 5 and 20 are cancelled. This rejection is respectfully traversed because Kwon does not discuss or suggest all the features of amended independent claims 1 and 18.

Kwon discusses a method of rinsing laundry in a washing machine with a tilted tub, the washing machine including a washing tub 60 having an inner tub 65 which is tilted and a tilted outer tub 61. Kwon does discuss a water circulation hose 70 which is branched from an outside end of a drain port 63 and extends outward along the tilted washing tub 60 so as to selectively and forcibly feed water from the washing tub 60 to the upper portion of the inner tub 65.

Kwon does not discuss or suggest that a water supplier supplies wash water into both a water tub and a rotary drum directly. Further, Kwon does not suggest that a controller controls a water supplier to supply wash water into a water tub and a rotary drum while washing laundry. Specifically, Kwon includes no discussion and in no way shows that a water supplier supplies water into both the outer tub 61 and into the inner tub 65 directly. Kwon discusses only that rinsing water is fed into the tilted washing tub 60, but does not suggest that water is fed into the outer tub 61 and directly into the inner tub 65. The water circulation hose 70 of Kwon which is branched from the outside end of the drain port 63 extends outward along the washing tub 60 to forcibly feed water from the washing tub 60 to the upper portion of the inner tub 65. The water circulation hose 70 cannot be construed to be a water supplier which both supplies wash water into outer water tub 61 and supplies wash water into inner tub 65. The water circulation hose 70 specifically only forcibly feeds water into the inner tub 65. Also, Kwon does not suggest that a

water supplier supplies wash water into the outer tub 61 and the inner tub 65 directly while washing laundry. The circulation hose 70 only feeds water into the inner tub 65 and does not also feed water into the outer tub 61 while washing laundry.

In addition, Kwon does not suggest that the inner tub 65 includes a front wall having a plurality of perforations formed through a front wall having a central opening to allow wash water to be drained when the inner tub 65 rotates. The inner tub 65 appears to have perforations formed through the side wall of the tub 65, but Kwon does not discuss or suggest that perforations are formed through a front wall of the inner tub 65, the front wall being the wall formed with a central opening.

Therefore, as Kwon does not discuss or suggest, "Therefore, as Ryu does not discuss or suggest, "a rotary drum located in the water tub to partially surround the wash water contained in the water tub, the rotary drum being installed to be inclined by a determined angle and including a back wall coupled to a rotary shaft, a front wall having a central opening, a cylindrical side wall having opposite ends respectively coupled to the front and back walls, and a plurality of perforations formed through the front wall to allow the wash water to be drained when the rotary drum rotates; a water supplier to supply the wash water into the water tub and to supply the wash water into the rotary drum directly; and a controller to control the water supplier to supply the wash water into the water tub and the rotary drum, respectively, while washing laundry, which has been placed in the rotary drum," as recited in amended independent claim 1, and as Ryu does not discuss or suggest "a water supplier to supply the wash water into the water tub and the rotary drum; a circulator to circulate the wash water; and a controller to control the water supplier to supply the wash water into the water tub and the rotary drum, respectively, while washing laundry, which has been placed in the rotary drum, and to control the circulator to mix the wash water contained in the water tub with the wash water contained in the rotary drum, wherein the rotary drum is installed to be inclined by a determined angle and includes a back wall coupled to a rotary shaft, a front wall having a central opening, a cylindrical side wall having opposite ends respectively coupled to the front and back walls, and a plurality of perforations formed through the front wall to allow the wash water to be drained when the rotary drum rotates," as recited in amended independent claim 18, claims 1 and 18 patentably distinguish over the reference relied upon. Accordingly, withdrawal of the § 102(b) or alternatively, § 103(a) rejection, is respectfully requested.

Claims 2-5 and 19-20 depend either directly or indirectly from independent claims 1 and 18 and include all the features of their respective independent claims, plus additional features

that are not discussed or suggested by the reference relied upon. For example, claim 19 recites, "a drum driver, to rotate the rotary drum, wherein the drum driver is controlled by the controller." Therefore, claims 2-5 and 19-20 patentably distinguish over the reference relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 102(b) or alternatively, § 103(a) rejection is respectfully requested.

In the Office Action, at page 4, numbered paragraph 7, claims 6 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwon in view of U.S. Patent No. 6,092,400 to Sumner et al. This rejection is respectfully traversed.

As discussed above with respect to independent claims 1 and 18, Kwon does not discuss or suggest all the features of claims 1 and 18. Sumner fails to make up for the deficiencies in Kwon. Therefore, claims 1 and 18 patentably distinguish over the reference relied upon. Claims 6 and 21 depend either directly or indirectly from independent claims 1 and 18 and include all the features of their respective independent claims, plus additional features that are not discussed or suggested by the reference relied upon. For example, claim 6 recites that, "the perforations are formed along a radially outer portion of a front wall of the rotary drum." Therefore, claims 6 and 21 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 103(a) rejection is respectfully requested.

In the Office Action, at page 4, numbered paragraph 8, claims 11 and 22-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Imamura in view of U.S. Patent No. 6,122,843 to Noguchi et al. This rejection is respectfully traversed.

As discussed above with respect to independent claims 1 and 18, Imamura does not discuss or suggest all the features of claims 1 and 18. Noguchi fails to make up for the deficiencies in Imamura. Therefore, claims 1 and 18 patentably distinguish over the references relied upon. Claims 11 and 22-24 depend either directly or indirectly from independent claims 1 and 18 and include all the features of their respective independent claims, plus additional features that are not discussed or suggested by the reference relied upon. For example, claim 11 recites, "a storage unit to store information about the set temperature corresponding to the washing course, wherein the controller recognizes the set temperature by searching the storage unit." Therefore, claims 11 and 22-24 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the § 103(a) rejection is respectfully requested.

Conclusion

In accordance with the foregoing, claims 5 and 20 have been cancelled. Claims 1 and 18 have been amended. Claims 1-4, 6-19 and 21-29 are pending and under consideration.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

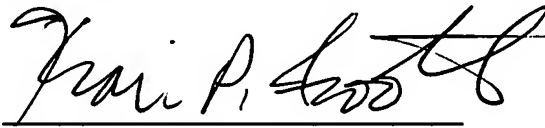
Respectfully submitted,

STAAS & HALSEY LLP

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7/6/07

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